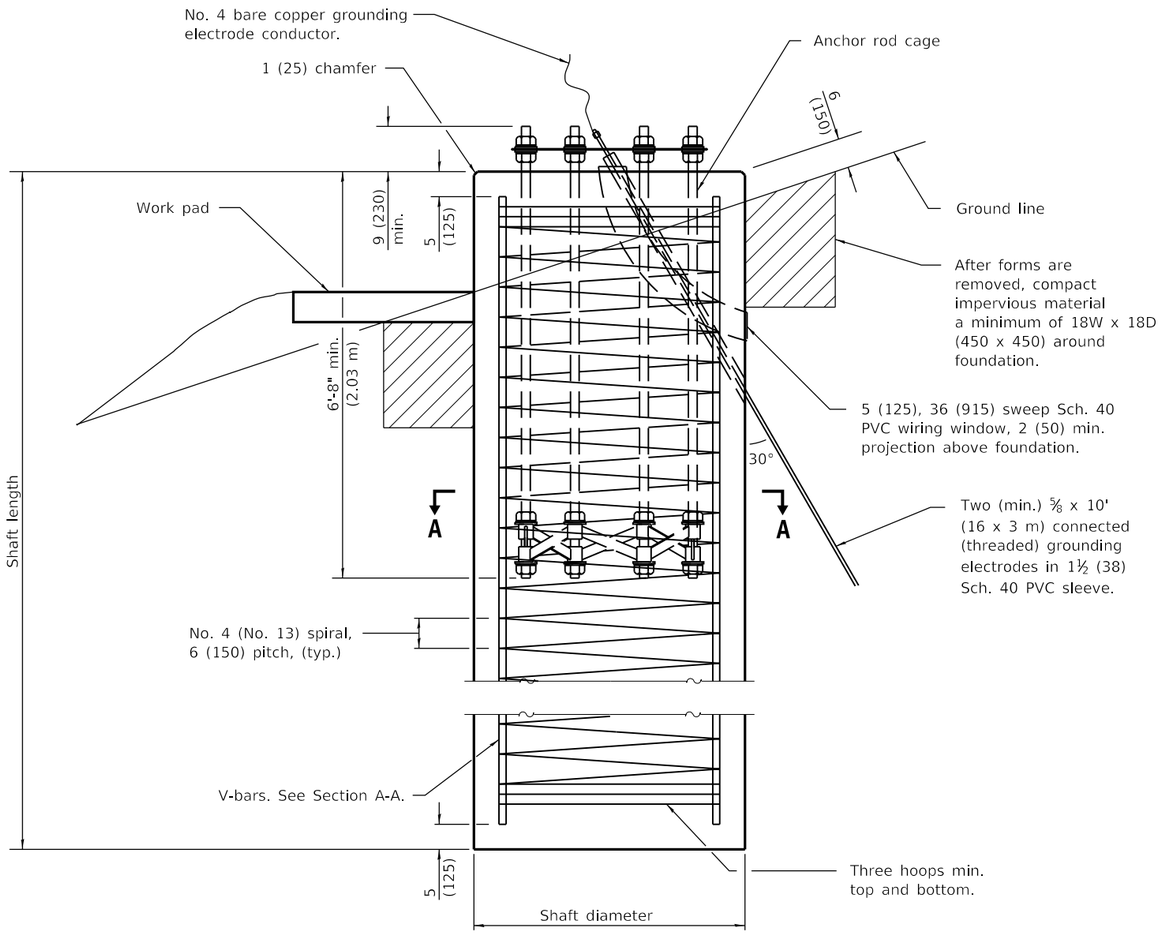
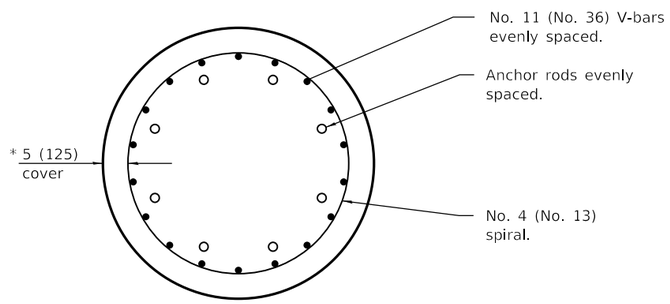


FOUNDATION ELEVATION



SECTION A-A

* See Rod and Reinforcement Table.

SHAFT LENGTH TABLE										
SOIL CONSISTENCY		AVERAGE STRENGTH	LIGHT TOWER HEIGHT							
		Qu in tsf (Qu in kPa)	80' (24 m)	90' (27 m)	100' (30 m)	110' (34 m)	120' (37 m)	130' (40 m)	140' (43 m)	150' (46 m)	160' (49 m)
Cohesive	SOFT	< 0.5 (< 50)	20'-6" (6.2 m)	21'-6" (6.5 m)	22'-6" (6.9 m)	24'-0" (7.2 m)	25'-0" (7.6 m)	26'-6" (8.0 m)	27'-6" (8.3 m)	28'-6" (8.7 m)	30'-0" (9.1 m)
	MEDIUM	0.5 to 1 (50 to 100)	17'-0" (5.1 m)	17'-6" (5.3 m)	18'-6" (5.6 m)	19'-0" (5.8 m)	20'-6" (6.2 m)	21'-6" (6.4 m)	22'-0" (6.7 m)	23'-6" (7.0 m)	24'-0" (7.3 m)
	STIFF	1 to 2 (100 to 200)	14'-6" (4.4 m)	15'-0" (4.5 m)	15'-6" (4.7 m)	16'-0" (4.8 m)	17'-6" (5.2 m)	18'-0" (5.4 m)	18'-6" (5.5 m)	19'-6" (5.9 m)	20'-0" (6.1 m)
	VERY STIFF	2 to 4 (200 to 400)	13'-0" (3.8 m)	13'-0" (3.9 m)	13'-6" (4.1 m)	14'-0" (4.2 m)	15'-0" (4.5 m)	15'-6" (4.6 m)	16'-0" (4.7 m)	17'-0" (5.1 m)	17'-6" (5.2 m)
	HARD	> 4 (> 400)	11'-6" (3.5 m)	12'-0" (3.5 m)	12'-0" 3.6 m)	12'-6" (3.7 m)	13'-6" (4.0 m)	13'-6" (4.1 m)	14'-0" (4.2 m)	15'-0" (4.5 m)	15'-6" (4.6 m)
		N in BLOWS/FT. (N in BLOWS/0.3m)									
Granular	VERY LOOSE	< 5 (< 5)	16'-6" (5.0 m)	17'-6" (5.2 m)	18'-0" (5.4 m)	18'-6" (5.6 m)	19'-0" (5.8 m)	20'-0" (6.0 m)	20'-6" (6.2 m)	21'-0" (6.3 m)	21'-6" (6.5 m)
	LOOSE	5 to 10 (5 to 10)	15'-0" (4.6 m)	16'-0" (4.8 m)	16'-6" (4.9 m)	17'-0" (5.1 m)	17'-6" (5.3 m)	18'-0" (5.5 m)	18'-6" (5.6 m)	19'-0" (5.7 m)	19'-6" (5.9 m)
	MEDIUM	10 to 25 (10 to 25)	14'-6" (4.4 m)	15'-0" (4.5 m)	15'-6" (4.7 m)	16'-0" (4.9 m)	16'-6" (5.0 m)	17'-0" (5.2 m)	17'-6" (5.3 m)	18'-0" (5.5 m)	18'-6" (5.6 m)
	DENSE	25 to 50 (25 to 50)	14'-0" (4.1 m)	14'-6" (4.3 m)	15'-0" (4.5 m)	15'-6" (4.6 m)	15'-6" (4.7 m)	16'-6" (4.9 m)	16'-6" (5.0 m)	17'-0" (5.2 m)	17'-6" (5.3 m)
	VERY DENSE	> 50 (> 50)	13'-0" (3.9 m)	13'-6" (4.1 m)	14'-0" (4.2 m)	14'-6" (4.4 m)	15'-0" (4.5 m)	15'-6" (4.7 m)	16'-0" (4.8 m)	16'-6" (4.9 m)	17'-0" (5.1 m)

See Sheet 2 for GENERAL NOTES.

Illinois Department of Transportation

APPROVED January 1, 2015
ENGINEER OF PRELIMINARY ENGINEERING

APPROVED January 1, 2015
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-10

DATE	REVISIONS
1-1-15	Added 6'-8" min. anchor
	rod embedment in
	foundation.
1-1-14	Revised diameter of grd.
	electrode sleeve.

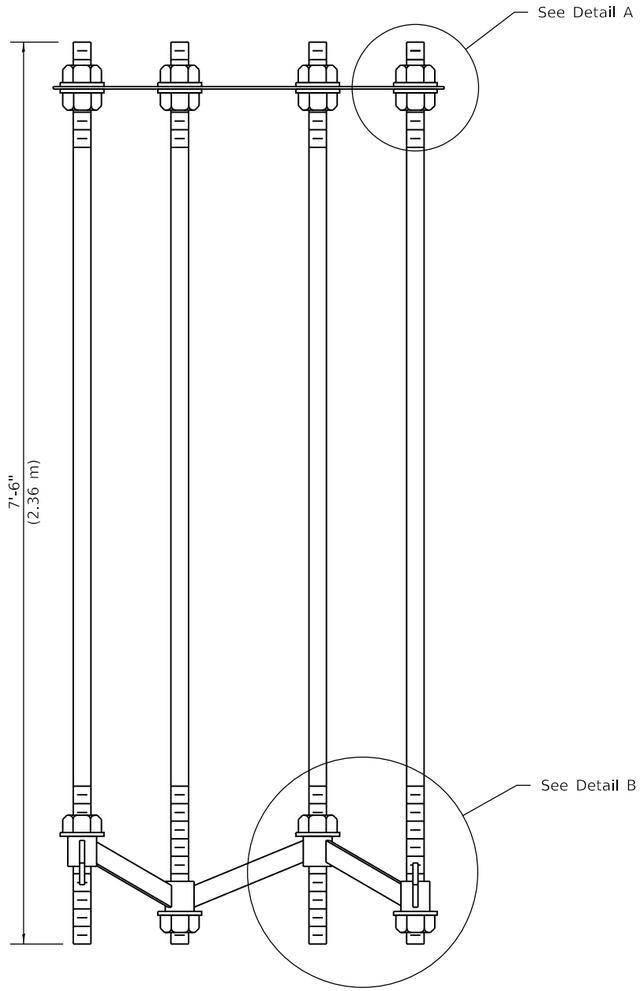
LIGHT TOWER FOUNDATION

(Sheet 1 of 2)

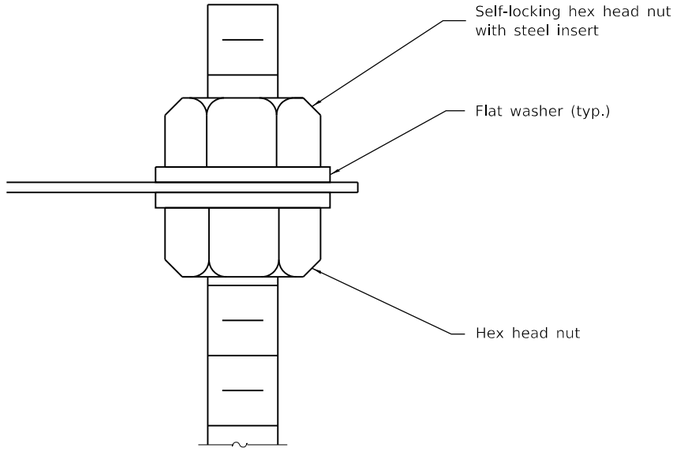
STANDARD 837001-04

ROD AND REINFORCEMENT TABLE					
TOWER HEIGHT	ANCHOR ROD DIAM. (MIN)	ROD CIRCLE DIAM. (MIN)	TOWER BASE DIAM. (MIN)	DRILLED SHAFT DIAM. (1)	V BAR QTY.
80' (25 m)	1½ (38)	30 (760)	24 (610)	4'-0" (1.2 m)	14
90' (27 m)	1½ (38)	30 (760)	24 (610)	4'-0" (1.2 m)	14
100' (30 m)	1½ (38)	30 (760)	24 (610)	4'-0" (1.2 m)	14
110' (34 m)	1½ (38)	30 (760)	24 (610)	4'-0" (1.2 m)	14
120' (37 m)	1¾ (44)	36 (915)	26 (660)	4'-6" (1.4 m)	18
130' (40 m)	1¾ (44)	36 (915)	28 (710)	4'-6" (1.4 m)	18
140' (43 m)	1¾ (44)	36 (915)	28 (710)	4'-6" (1.4 m)	18
150' (46 m)	2¼ (57)	38 (965)	30 (760)	5'-0" (1.5 m)	22
160' (49 m)	2¼ (57)	38 (965)	32 (810)	5'-0" (1.5 m)	22

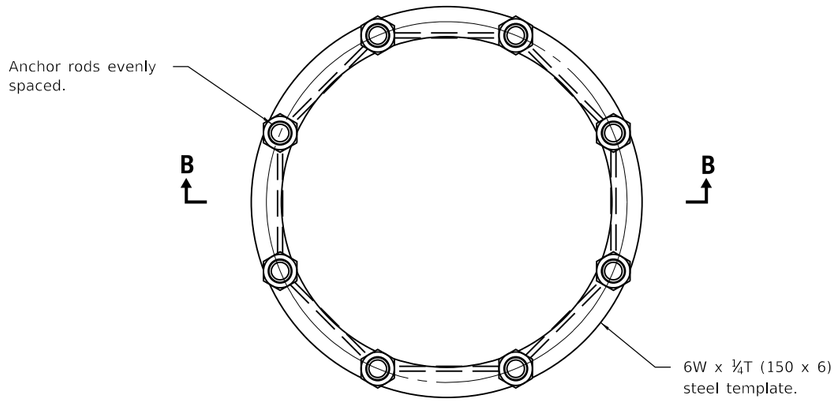
(1) Diameter based on a 5 (125) conc. cover. The min. cover shall be 3 (75) in dry shaft excavation and 4 (100) in a wet hole. When rock is encountered a 5 (125) cover against soil and a 2 (50) cover against rock shall be required.



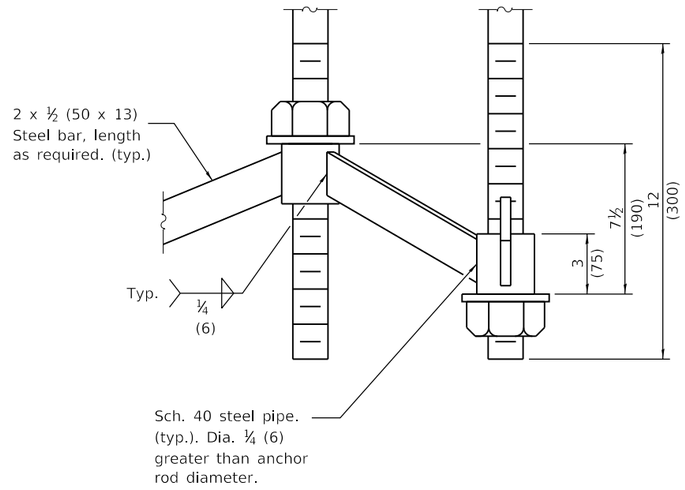
SECTION B-B



DETAIL A



ANCHOR ROD CAGE (PLAN)



DETAIL B

GENERAL NOTES

The shaft length(s) are based on soil borings in the plans. If different soils are encountered, the engineer shall be notified to provide a revised length.

Anchor rod quantity, diameter, and length shall be determined by the tower manufacturer and approved by the Engineer. Each foundation shall have a minimum of 8 anchor rods.

All foundation reinforcement steel shall be epoxy coated.

The cost of reinforcement shall be included in the cost of the foundation.

Steel anchor rod forms shall not be removed for a minimum of 3 days after concrete is poured. The tower shall not be set for a minimum of 7 days or as approved by the Engineer.

Coordinate the rod circle diameter of the tower with the diameter of the anchor rod cage.

The foundation shall be poured monolithically and shall have no construction joints.

Grounding electrodes shall be installed in an access well when there is a conflict in using the method shown.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

APPROVED January 1, 2015
ENGINEER OF PRELIMINARY ENGINEERING

APPROVED January 1, 2015
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-10

LIGHT TOWER FOUNDATION

(Sheet 2 of 2)

STANDARD 837001-04